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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/395,297	09/13/1999	SOPHIE WILSON	1073/OG116	5799

7590

03/04/2004

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EXAMINER

MEONSKIE, TONIA L

ART UNIT	PAPER NUMBER
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2183

DATE MAILED: 03/04/2004

14

Please find below and/or attached an Office communication concerning this application or proceeding.

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# Office Action Summary

Application No.

09/395,297

Applicant(s)

WILSON, SOPHIE

Examiner

Tonia L Meonske

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 18 October 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 7-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 7-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 July 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

DETAILED ACTION

*Specification*

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

*Claim Objections*

2. Claim 1 is objected to because of the following informalities: In claim 1, line 17, please change the limitation "aid" to read --said--. Appropriate correction is required.

*Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-5 and 7-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yung et al., US Patent 5,996,066, cited as a prior art reference in paper number 8 mailed on February 27, 2002, in view of Petro et al., US Patent 6,272,514.

5. Referring to claim 1, Yung et al. have taught an execution unit for use in a computer system for conditionally carrying out an operation defined in a computer instruction, the execution unit comprising:

- a. first and second input stores for holding respective first and second operands on which an operation defined in the instruction is to be carried out (Figure 7, elements 92 and 94, Figure 6B, element 68a, RS1 and RS2, Column 6, lines 17-35), wherein each

- store holds a plurality of objects of a predetermined size (Figure 9A, element 108), each object defining one of a plurality of lanes, a maximum number of lanes being determined by a smallest allowable predetermined object size (Figure 9A, element 108, column 8, lines 11-41, Column 3, lines 46-57);
- b. a plurality of operators associated respectively with said lanes for carrying out an operation specified in the instruction on objects in corresponding lanes of said first and second input stores (column 8, lines 16-22);
  - c. a destination buffer for holding the results of the operation on a lane by-lane basis (Figure 9A, element 114);
  - d. and selecting means for determining for each lane in dependence on stored condition values whether or not the operation is to be executed on objects in that lane (column 8, lines 16-37);
  - e. wherein a number of stored condition values corresponds to said maximum number of lanes in each of said first and second input stores (Figure 9C, element 112, The maximum is four lanes and the Mask stores four bit values.);
  - f. a prior operation being operable to generate said condition values (Column 8, Lines 16-22).
6. Yung et al. have not specifically taught a prior operation being operable to generate said condition values so that, when the operand have less than the maximum number of lanes, two or more condition values are set to a same value so that each individual condition value is generated regardless of a degree of packing of the first and second source operands. However, Petro et al. have taught grouping adjacent ALU's together in order to allow one or more partitioned

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arithmetic operations to occur in parallel (Abstract, column 3, line 50-column 4, line 20, column 8, line 56-column 9, line 17). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the invention of Yung et al. group adjacent ALU's, as taught by Petro et al., for the desirable purpose of allowing one or more partitioned arithmetic operations to occur in parallel (Abstract, column 3, line 50-column 4, line 20, column 8, line 56-column 9, line 17). Furthermore, when the adjacent lanes of Yung et al. are grouped, it logically follows that the adjacent masks would be grouped as well, whereby more than one condition values are set to the same value.

7. Referring to claim 1 to claim 2, Yung et al. have taught an execution unit according to claim 1, wherein said condition values comprise a set of condition codes (Figure 9A, element 108).
8. Referring to claim 3, Yung et al. have taught an execution unit according to claim 2, as described above, and wherein the selecting means comprises means for comparing selected ones of said set of condition codes with a test code identified in the instruction (Column 8, lines 16-22).
9. Referring to claim 4, Yun et al. have taught an execution unit according to claim 2, as described above, and wherein the number of condition codes in said set corresponds to the maximum number of lanes in each of the first and second source operands (Figure 9C, element 112).
10. Referring to claim 5, Yung et al. have taught an execution unit according to claim 2, as described above, and which comprises a condition code generator for generating said set of

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condition codes responsive to execution of an instruction (Column 8, lines 16-22, The first OP code sets the mask value and is therefore the condition code generator.).

11. Referring to claim 7, Yung et al. have taught an execution unit according to claim 4, as described above, and wherein the number of condition codes in said set corresponds to the maximum number of lanes in the first and second source operands (Yung et al., Figure 9C, element 112) and wherein the condition code generator is operable to generate the set of condition codes so that, when the operands have less than the maximum number of lanes, two or more condition codes are set to the same value so that each individual condition code in the set is generated regardless of the degree of packing of the first and second source operands (This is the obvious result when Yung et al. is combined with Petro et al., see the rejection to claim 1.).

12. Referring to claim 8, Yun et al. have taught a computer system for conditionally carrying out an operation defined in a computer instruction, the computer system comprising:

- a. fetch and decode circuitry for fetching and decoding a sequence of instructions from a program memory (Yung figure 1, elements 46 and 44a),
- b. at least one execution unit according to any of claims 1 to 7 (Yung figure 1, elements 48, 30, 31, 25, 26, and 28) and
- c. at least one memory access unit for effecting memory access operations responsive to memory access instructions (Yung figure 1, elements 48, 44b, and signal "TO/FROM MEMORY").

13. Referring to claim 9, Yung et al. have taught a computer system according to claim 8, as described above, which comprises a condition code register for holding said condition values in the form of a set of condition codes (Figure 9C, element 112).

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14. Referring to claim 10, Yung et al. have taught a computer system according to claim 8, as described above, which includes a test register for holding a test code (Figure 9C, element 112), the test register being addressed by a computer instruction and said test code being used in comparison with said condition values to determine for each lane whether or not the operation is to be executed on objects in that lane (Column 7, line 60-column 8, line 37).

15. Claim 11 does not recite limitations above the claimed invention set forth in claim 1 and is therefore rejected for the same reasons set forth in the rejection of claim 1 above.

16. Claim 12 does not recite limitations above the claimed invention set forth in claims 1, 2, and 3 and is therefore rejected for the same reasons set forth in the rejection of claims 1, 2, and 3 above.

17. Claim 13 does not recite limitations above the claimed invention set forth in claims 1, 2, 3, and 10 and is therefore rejected for the same reasons set forth in the rejection of claims 1, 2, 3, and 10 above.

#### ***Response to Arguments***

18. Applicant's arguments with respect to claims 1-5 and 7-13 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Conclusion***

19. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

20. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**

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MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tonia L Meonske whose telephone number is (703) 305-3993. The examiner can normally be reached on Monday-Friday, 9-6:30, with every other Friday off.

22. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie P Chan can be reached on (703) 305-9712. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

23. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

tlm



**RICHARD L. ELLIS**  
**PRIMARY EXAMINER**